



OPH-Z WEIGHING SCALE USER'S MANUAL



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SAFETY PRECAUTIONS

- To avoid damaging the battery do not keep charger plugged in once battery is fully charged
- Avoid installing the balance in direct sunlight. This may cause poor performance or malfunctions.
- Do not mix batteries, replace all 4 batteries at the same time
- If the balance will not be used for a long period of time, remove all batteries from the battery compartment to avoid leakage, which may cause damage to the instrument
- Avoid overloading or dropping material onto the platform as that may damage the balance
- Place the weight on the center of the pan for accurate weighing
- Make sure the weight is not over the Max capacity as it could damage the load cell inside.
- Do not spill liquids on the balance as it is not water-resistant. Liquids may damage the case and any liquid inside may cause damage to the electronics
- Material that has a static electric charge could influence the weighing. Discharge the static electricity of the samples, if possible. Another solution to the problem is to wipe both sides of the pan and the top of the case with an anti-static agent
- Strong magnetic fields and static electricity will have an adverse effect on the weighing sensor, when the disturbances disappear the machine will function properly again
- Do not modify this machine without authorizing with manufacture
- Do not open the machine housing. Machine will lose its guarantee service if security label is broken


PREPARATIONS & SET UP

- Place your balance on a flat, stable and level surface that is free of vibration and drafts and free from corrosive and strong magnetic fields as they have adverse effects on the weighing sensors
- Level your balance by adjusting the feet to center the bubble in the spirit level
- Do not put machine close to the central heating, sunshine, airflow, opening door or window
- Do not expose machine to extreme heat or cold. Keep scale in a clean, dry location because dust, dirt and moisture can accumulate on the weighing sensor
- Plug into a wall outlet to avoid interference with other wirings
- Turn on the balance while there is no load on the pan
- Allow scale to warm up for 1 minute before use
- Calibration may be required before weighing when the balance is initially installed or moved from a location
- If the balance is moved from a place with a difference in temperature, please allow the machine to adjust to the room temperature for 2 hours before use

KEY EXPLANATION



Powering On

- Turn on the power by pressing the  button located under the scale's screen. Once on, the scale will flash the maximum capacity then enter the weighing mode and display "0"



Menu

- Press and hold MENU for 5 seconds to enter the settings mode
- Press and hold MENU for 1 second to save and exit settings mode

Calibrate / Zero (Enter Key)

- Short press CAL to zero the scale in weighing mode
- Press and hold CAL for 5 seconds to enter the calibration mode
- In settings mode short pressing changes the sub menu
- At the last menu, pressing CAL will confirm the present status and return to either the previous menu, or enter into a weighing function (such as density, dynamic)



Unit (Move Key)

- To switch between measuring units
- Move the cursor (flashing digit) to the left
- When all digits flash press UNIT to change to a single digit flash



Print (Cycle Key)

- When manual printing mode, press PRINT to send weighing data to the printer or computer
- In settings mode when a single digit flashes it will increase the value
- In settings mode when the display flashes it cycles to next parameter

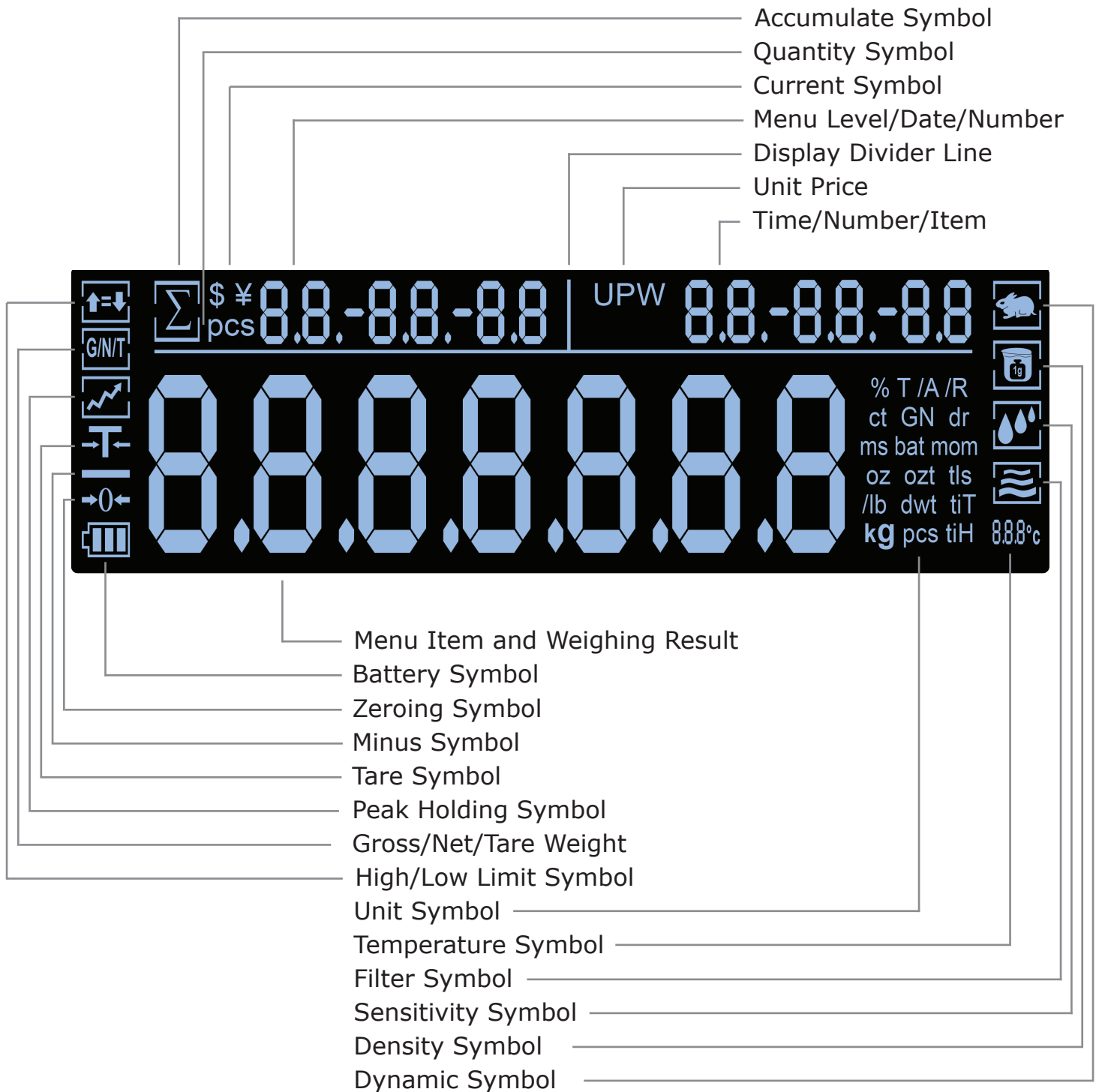


Tare (Return Key)

- Tare
- In settings mode: return to the previous menu without save
- Press and hold PRINT for 1 second to exit from a weighing function (such as density or dynamic)



DISPLAY EXPLANATION




CALIBRATION

When to calibrate

- When the scale is initially installed
- When the scale's location has changed
- After the scale has not been used for a long period of time
- If ambient temperatures have changed greatly

How to Calibrate (Span)

- Press the power button  to turn the scale on
- When there is no weight on the pan hold the CAL key for about 5 seconds
- When display shows "-CAL-", release the CAL key
- The display will flash the exact weight needed to calibrate
- Place exactly the required weight on the scale
- When the display stops flashing unload calibration weight
- "----" will be displayed briefly to indicate the completion of span calibration
- The display should show 0
- Place your calibration weight on the scale. If the scale reads the same value the calibration has succeeded. If not please repeat calibration process.

How to Linear Calibrate

- Linear calibration
- Verify the pan is empty
- Press the CAL (calibration) key for about 5 seconds to enter into calibration mode. When display shows "-CAL-", release the CAL key
- Press and hold the MODE key for about 5 seconds, and the blinking number indicates what weight should be placed on the pan
- Load the indicated weight, and wait for the display to stop blinking (scale has recorded this linear value)
- Unload the weight
- Wait for the next blinking number to indicate what weight to place on the pan
- Load the indicated weight, and wait for the display to stop blinking (scale has recorded this linear value)
- Unload the weight
- When the display shows "0.000", it means the linear calibration is completed

OPERATING INSTRUCTIONS

Preparation:

- Turn machine on
- Allow to warm up for five minutes

To weigh:

- Add weight to the scale, the display will show result
- Use the unit key to change between units

To tare:

- The Tare function is used when you only wish to see the current change in weight, not the entire amount of weight that is on the scale
 - Example: Put a container you wish to use on the pan, then press the TARE key and the display will show the tare symbol $\rightarrow T \leftarrow$ and reset back to 0
 - Add your sample to the container to weigh without the weight of the container
 - To exit Tare mode simply press TARE
- Note:** If you remove your container the scale will show the minus weight of the container

To count:

- The counting function is used to count a high volume of identical parts. You can do this by setting a sample and then either adding to the sample or taking away from the sample to count the number of objects on the scale
- This function can calculate the quantity with total weight divided by signal weight
- Press and hold MENU until the screen reads --MODE--
- Press CAL to enter and the screen will read -COUNT-
- Press CAL again and the screen will read SAMPLE
- Press CAL again to display the sample quantity ex. 0000020 pcs
- Press PRINT to cycle through sample quantities and select
- To set the quantity manually: Press UNIT to move the cursor to the left and the PRINT key to increase the number value
- Press CAL to select
- The display will show the results
 - Upper left displays the quantity: 20pcs
 - Upper right displays the unit weight: 0.11g
 - Main window displays the total weight: 2.200g
- Remove samples from pan, the display will show 0.00g
- Place an unknown amount of pieces on the pan and the scale will count (Example: put 100pcs, total weight 11g)
- To exit counting mode press and hold TARE key

pcs 20 | U W 0.11000
2.200 g

pcs 100 | U W 0.11000
11.000 g

Note: to exit the present counting state and restart a new counting state, Press CAL to enter a new sample

SETTINGS

Hiding Units

Operator can choose which units it wants to display by turning each unit on or off which will either display or hide each unit from the display screen.

Instance

Key (Order)	Step Explanation	LCD Screen Display
Press and Hold [MENU] Key	1. Display Menu	--mode--
Short Press [MENU] Key	2. Enter Into Setting Menu	--base--
Short Press [CAL] Key	3. Display weighing range and precision menu	-SCALE-
Short Press [MENU] Key	4. Enter Into Unit Turn ON/OFF Mode	--UNIT--
Short Press [CAL] Key	5. Display Unit ct and flash "ON" (Turn on)	22.101 09-20-08 ct- ON ^{ct}
	* Three position to display as: Upper left displays the menu code, Upper right displays the time, Main window displays the unit status.	
Short Press [PRINT] Key	6. Display Unit ct and flash "OFF" (Turn off)	ct-OFF
Short Press [MENU] Key	7. Cycle to another unit oz and flash "ON"	oz- ON
Short Press [PRINT] Key	8. Display Unit oz and flash "OFF"	oz-OFF
	* Repeat Step 7-8 can change unit on/off one by one as follow : ct, oz, ozt, dwt, GN, lb, N, dr, tIT, tIs, tIH, T, T/A/R, /A/R, ms, bat, mom, /lb, kg	
	* The default setting is all units was turn on.	
Short Press [CAL] Key	9. Confirm turning on or off the units	--UNIT--
Short Press [TARE] Key Two Times	10. Setting is finished and return to Standby	

Note: The grey color words explain the signal's meaning which flash on the window.

Date Setting

Operator can setup machine date in the setting menu.

Instance (Example: 2015 Year - 05 Month -10 Day)

Key (Order)	Step Explanation	LCD Screen Display
Press and Hold [MENU] Key	1. Display Menu	--mode--
Short Press [MENU] Key	2. Enter Into Setting Menu	--base--
Short Press [CAL] Key	3. Display weighing range and precision menu	SCALE
Short Press [MENU] Key Two Times	4. Enter Into Date Setting	--date--
Short Press [CAL] Key	5. Display Year	YEAR - 15
	* Operator can set year by : Press [UNIT] key to move cursor and press [PRINT] to cycle and select number.	
Short Press [MENU] Key	6. Display Month	mon - 05
	* Operator can set month by : Press [UNIT] key to move cursor and press [PRINT] to cycle and select number.	
Short Press [MENU] Key	7. Display Day	day - 10
	* Operator can set day by : Press [UNIT] key to move cursor and press [PRINT] to cycle and select number.	
Short Press [CAL] Key	8. Confirm the date and return to previous menu	--date--
Short Press [TARE] Key Two Times	9. Finish Setting and return to Standby	

Note: The grey color words explain the signal's meaning which flash on the window.

Time Setting

Operator can setup machine time in the setting menu.

Instance

Key (Order)	Step Explanation	LCD Screen Display
Press and Hold [MENU] Key	1. Display Menu	--mode--
Short Press [MENU] Key	2. Enter Into Setting Menu	--base--
Short Press [CAL] Key	3. Display weighing range and precision menu	-SCALE-
Short Press [MENU] Key Three Times	4. Enter Into Time Setting Mode	--11:55--
Short Press [CAL] Key	5. Display Hour	Hour-20
	* Operator can set hour by : Press [UNIT] key to move cursor and press [PRINT] to cycle and select number.	
Short Press [MENU] Key	6. Display Minutes	11:00-15
	* Operator can set minutes by : Press [UNIT] key to move cursor and press [PRINT] to cycle and select number.	
Short Press [MENU] Key	7. Display Second	SEC--50
	* Operator can set second by : Press [UNIT] key to move cursor and press [PRINT] to cycle and select number.	
Short Press [MENU] Key	8. Display Time Mode	H----24
	* Operator can press [PRINT] key to select 24 hours or 12 hours.	
Short Press [CAL] Key	9. Confirm the Time and return	--11:55--
Short Press [TARE] Key Two Times	10. Setting finished and return to standby	

Note: The grey color words explain the signal's meaning which flash on the window.

Backlight On/Off Setting

Operator can turn on/off/auto backlight in the setting menu.

Instance

Key (Order)	Step Explanation	LCD Screen Display
Press and Hold [MENU] Key	1. Display Menu	--mode--
Short Press [MENU] Key	2. Enter Into Setting Menu	--base--
Short Press [CAL] Key	3. Display weighing range and precision menu	-SCALE-
Short Press [MENU] Key Five Times	4. Enter into backlight setting and flash "ON"	bl -- ON
Short Press [PRINT] Key	5. Backlight turn on/off automatically and flash "AUT"	bl -- Aut
Short Press [CAL] Key	6. Confirm the backlight setting and return	--base--
Short Press [TARE] Key	7. Finish the setting and return to standby	

Buzzer On/Off Setting

Operator can turn on/off the buzzer sound by setting menu.

Instance

Key (Order)	Step Explanation	LCD Screen Display
Press and Hold [MENU] Key	1. Display Menu	--mode--
Short Press [MENU] Key	2. Enter Into Setting Menu	--base--
Short Press [CAL] Key	3. Display weighing range and precision menu	-SCALE-
Short Press [MENU] Key Six Times	4. Enter into buzzer setting and flash "ON"	beep ON
Short Press [PRINT] Key	5. Turn off buzzer and flash "OFF"	beep OFF
Short Press [CAL] Key	6. Confirm the buzzer setting and return	--base--
Short Press [TARE] Key	7. Finish the setting and return to standby	

Note: The grey color words explain the signal's meaning which flash on the window.

Communication Settings

Key (Order)	Step Explanation	LCD Screen Display
Press and Hold [MENU] Key	1. Display Menu	--ñodē--
Short Press [MENU] Key Two Times	2. Enter into Communication Setting	--[onñ--
Short Press [CAL] Key	3. Enter into Baud rate Setting	bAud-96
	* Press [PRINT] key and select different baud rate in turns: 12: 1200bps, 24: 2400bps, 48: 4800bps, 96: 9600bps	
Short Press [MENU] Key	4. Enter into Machine ID Setting	Id--255
	* Operator can set Machine ID from 001 to 255, Press [UNIT] key to move the cursor and press [PRINT] key to select the number.	
Short Press [MENU] Key	4. Enter Into Data frames format Setting	Fñt-ASC
	* Press [PRINT] key can select ASC (ASCII format) or ATU (Modbus ATU).	
Short Press [MENU] Key	4. Enter Into Communication Way Setting	[onñ KEY
	* Press [PRINT] key can select : NON: turn off communication, CON: communicate continuously, STY: communicate while steady, KEY: communicate only press [PRINT] key, SOFT: communicate with software, Txxx: communicate every XX seconds (Can set time manually).	
Short Press [MENU] Key	4. Print Way Setting	Prt KEY
	* Press [PRINT] key can select : NON: turn off print, KEY: print only press [PRINT] key, SOFT: print by software order, Txxx: print every XX seconds (Can set time manually).	
Short Press [MENU] Key	4. Peripheral Equipment Setting	KEY-Prt
	* Press [PRINT] key can select : KEY.PRT, KEY.COM, KEY.ALL, KEY.NON	
	* Short Press [CAL] key to select KEY.PRT and return: Machine send signal to printer when press [PRINT] key. Short Press [CAL] key to select KEY.COM and return: Machine send signal to computer when press [PRINT] key. Short Press [CAL] key to select KEY.ALL and return: Machine send signal to printer and computer both when press [PRINT] key. Short Press [CAL] key to select KEY.NON and return: Press [PRINT] key NO SIGNAL CAN SEND OUT.	
Short Press [CAL] Key	5. Confirm and return to previous menu	--[onñ--
Short Press [TARE] Key	6. Finish Setting and return to standby	

* The grey colored sections are the following operation after Step 1-3 baud rate Setting.

Note: The grey colored text explain the signal's meaning which flash on the window.

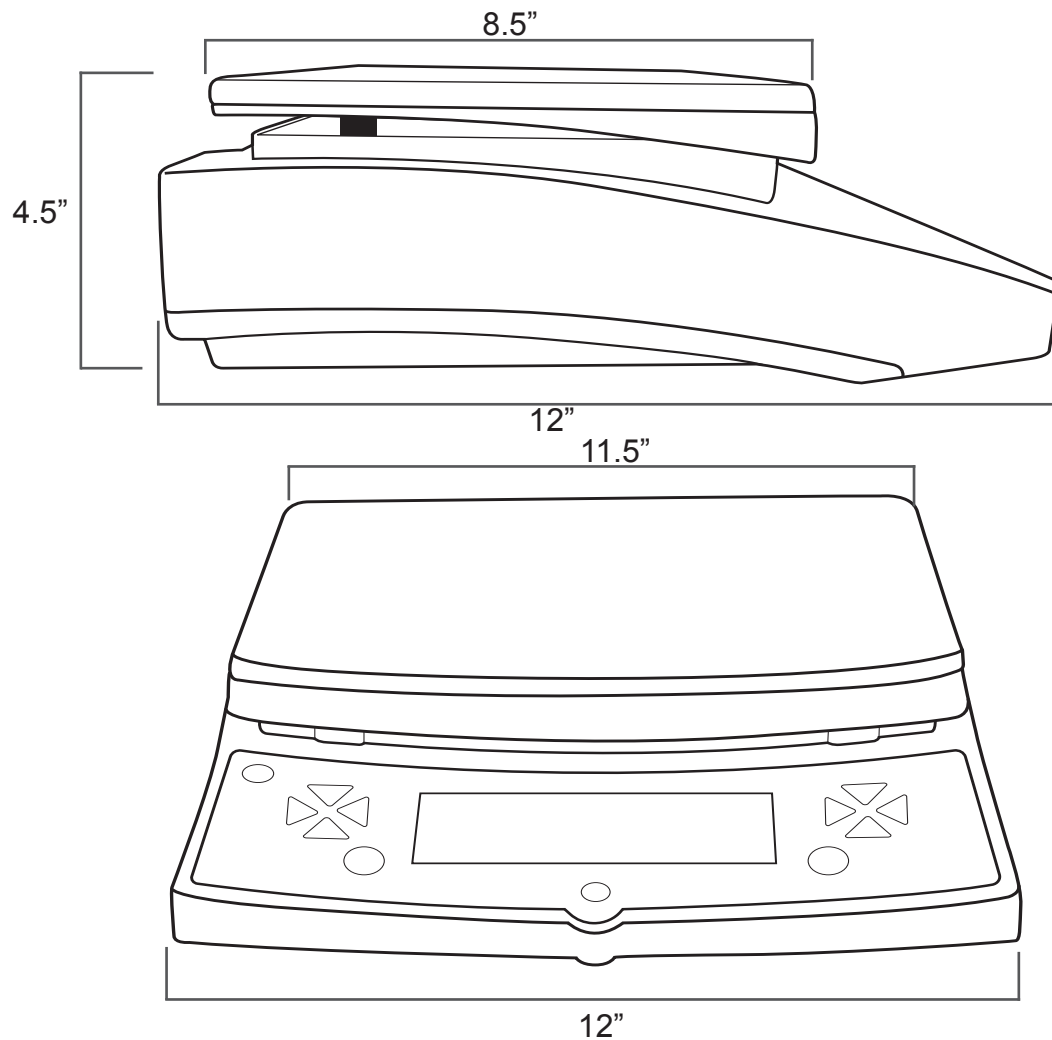
Unit Signal	Unit	Unit Exchange Rate
g	<i>Gram</i>	1
ct	<i>Carat</i>	5
oz	<i>Ounce</i>	0.03527396200
ozt	<i>Troy Ounce</i>	0.03215074700
dwt	<i>Pennyweight</i>	0.64301493100
GN	<i>Grains</i>	15.43235835000
lb	<i>Pound</i>	0.00220462260
N	<i>Newton</i>	0.00980654189
dr	<i>Dram</i>	0.56438222222
tlT	<i>Taiwan Tael</i>	0.02666666000
tlS	<i>Singapore Tael</i>	0.02645544638
tlH	<i>Hong Kong Tael</i>	0.02671725000
T	<i>Tola</i>	0.08573532418
T/A/R	<i>tola / anna / rati T.A.R</i>	0 . 01 . 2 . 23
/A/R	<i>tola / Mna / rati T.M.R</i>	0 . 01 . 0 . 23
ms	<i>Mesghal</i>	0.21700000000
bat	<i>Baht</i>	0.06578947437
mom	<i>momme</i>	0.26670000000
/lb	<i>Parts per pound</i>	1.12876677120
kg	<i>Kilogram</i>	0.00100000000

SPECIFICATIONS

Features	Benefits
Large Capacity and High Resolution	Works for various applications
Rugged Construction	Assures fast, stable, and reproducible results
Large stainless steel pan	Allows for easy weighing of large objects
Date, Time and Temperature displays	Advanced, user-friendly features
Legendary VATN High Contrast LCD screen	Ensures clear readings in any conditions
Leveling feet with level bubble	Makes it level even on uneven working surfaces
Below balance weighing	Determines density of large pieces
Configurable RS 232 interface	Allows for communication w/ peripheral data collection and printing
Multiple weighing units	Allows for flexibility of weighing

Model	OPH-Z10	OPH-Z20	OPH-Z30
Capacity	10 kg (22 lb)	20 kg (44 lb)	30 kg (66 lb)
Resolution	0.1 g		
Repeatability	± 0.2 g		
Linearity Error	± 0.2 g		
Response Time	≤ 2 sec		
Calibration	Calibration with External Weight		
Weighing Units	g, lb, kg, oz, ct, ozt, pcs, tls, tIT, tIH, dwt, GN (grain), dr, ms, bat, mom T/A/R		
Construction	Cast aluminum, static resistant ABS, stainless steel pan		
Display	Large, easy to read LCD display with backlight and icons, 3/4" (19 mm) high		
Pan Size	11.5" x 8.5" (295 x 220 mm)		
Body dimension (W x D x H)	12" x 12" x 4.5" (320 x 320 x 120 mm)		
Power	110v - 240v, 50HZ / 60HZ		
Operational Temperature	50 °F to 86 °F / 10 °C to 30 °C		
Connectivity	Configurable RS 232 interface		

DIMENSIONS



CONTACT US

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